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Walden University

College of Health Sciences

This is to certify that the doctoral study by

Barbara Hudgens

has been found to be complete and satisfactory in all respects,
and that any and all revisions required by
the review committee have been made.

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Walden University

2020

Abstract

Clinical Practice Guideline Development to Diagnose and Treat Adolescents with
Obesity

by

Barbara Hunter Hudgens

MS, University of Central Arkansas, 2012

BS, Southern Arkansas University, 2009

Project Submitted in Partial Fulfillment
of the Requirements for the Degree of
Doctor of Nursing Practice

Walden University

August 2020

Abstract

Adolescent obesity is a worldwide multifaceted epidemic. This disease affects the medical, physical, psychosocial, and family aspects of adolescent life. Identification, diagnosis, and referrals to providers that can initiate early interventions that improve weight status have been recommended as critical steps in curtailing childhood obesity. This evidence-based clinical practice guideline (CPG) was developed for the healthcare providers at a rural clinic in Southwest Arkansas to provide consistency in the identification, diagnosis, and referral of adolescents. The health belief model (HBM) and the trans-theoretical model (TTM) were used to consider adolescents' individual characteristics and beliefs as well as their readiness to change. The project question examined the development of a CPG and how it could impact a more consistent method of diagnosis, referral, and treatment for the obese teens. The Inter-professional Collaborator Assessment Rubric (ICAR) assessment and evaluation tool was used to collect data regarding inter-professional collaboration. Seven healthcare providers participated in the ICAR questionnaire. Results of this evaluation found that healthcare providers could improve inter-professional collaboration for this population by the creation of the CPG. Implementation of the CPG to gather data for the clinic are recommended. Other recommendations are to trial in other small rural clinics to determine if findings correlate. If so, this could have the potential for a positive social change for this population's health, mental status, and social health. This could impact healthcare costs as the adolescent grows into adulthood.

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Dedication

I would like to dedicate this capstone to God and to my husband, Lewis Hudgens, who has provided me with unlimited support, love, understanding, and encouragement. Without this support, I would not have been able to accomplish this dream. I want to also dedicate this to my children, Steven Locklear, Greg Locklear, and Reanne Hudgens. They are the loves of my life and have all been there for me through thick and thin.

A special dedication to those that have been watching from above: my mom, Ruthie Kirkpatrick Harris and Hubert Harris, my dad Tillman and Annette Hunter, and a very special aunt, Marge Hunter. They have been my cheerleaders my entire life. I hope this makes you all proud.

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Section 1: Nature of the Project

Introduction

The primary healthcare provider plays an important role in the plan of care with diagnosis, education, and management of care. Kuhle, Doucette, Piccinini-Valls, & Kirk, (2015) reported that it is the doctors and nurses who are usually the patient's first contact in the health care system. This can be especially true in rural areas of the country where major medical centers may not be as readily available. Thus, the interactions patients have with their healthcare providers can be especially significant.

In a rural health clinic in a southern state, the health providers, patients, and their families have noted substantial variability when treating obese adolescents. According to the American Academy of Pediatrics (2020), even nationwide, there is a lack of successful interventions to counteract the environmental forces that contribute to weight gain in children. This can lead to few guidelines and protocols on how to treat these adolescents in a consistent manner that all healthcare members can follow. Early identification and referral to other providers who can initiate interventions that improve weight status has been recommended as a critical step in the pathway to curtailing the rise in overweight and obesity in children and adolescents (Puhl & King, 2013).

Adolescent obesity is a health risk that is complicated by its various causes. Among these are psychosocial and genetic determinants that may be non-modifiable such as genetics, sex, age, and race (Centers for Disease Control, 2019). The risk of developing obesity starts early on in life and can include high birth weight, rapid growth in infancy, maternal smoking during pregnancy, and lack of breastfeeding, which are all

indicated as positive predictors. Additionally, family food environment and dietary behaviors, which are usually considered to be modifiable, can be difficult to change. Being physically active can also serve as a positive factor against the development of obesity in children (Jackson ,Jackson, Kimeli, & Eleys, 2019).

Although different alternatives, approaches, and treatment modalities have been developed in the United States to decrease obesity in the adolescent patient, the incidence has not been reduced. Nurses Practitioners (NPs) are fundamental in the care of obese children and often are the first to assess and provide treatment for them. In order to improve the quality of nursing care and promote the reduction of weight in adolescents, it was essential that a Clinical Practice Guideline (CPG) be created that will assist the healthcare providers to consistently diagnose and treat overweight and obese adolescents. The goal of this project was to create a clinical practice guideline to reduce patient obesity by creating awareness for the healthcare staff of the need of consistent assessment, referral, and treatment of patients. This doctoral project produced a social change for the rural clinic by providing the healthcare team with a CPG that is cost effective, evidence-based, functional, and realistic and parallels the American Association of Colleges of Nursing, Doctor of Nursing Practice Essential II, (2006, p. 10 & 11).

Problem Statement

In 2001, the US Surgeon General released a “*Call to Action*” that labeled obesity an epidemic. Unfortunately, the country failed to meet the Healthy People 2010 goals for obesity and instead, the problem increased. In 2010, the US Surgeon General revisited

obesity with the report “*The Surgeon General’s Vision for a Healthy and Fit Nation.*” Healthcare providers were encouraged to not only look at BMI numbers in patients, but to also to support fighting obesity by promoting an inter-collaborative plan for optimal level of health and well-being (Wishner, 2019). Currently, in this rural clinic, there remains an urgency to meet the needs of the overweight and obese adolescent patient. This is evidenced by children who are presenting with numerous ailments and diseases that either co-occur or are caused by diabetes, elevated blood pressure and cholesterol, depression, body dissatisfaction, binge eating, and engagement in disordered weight control behaviors.

The practice problem at this rural clinic was the lack of consistent diagnosis, referral, and treatment. At this facility, an employee in the care coordination department conducted a retrospective chart review of 23 charts. Three of these had the diagnosis of overweight and obese in the adolescent’s chart, despite the initial assessment of the child showing a weight-to-height ratio that clearly demonstrates being overweight or obese. Although some adolescents enter the clinic with a diagnosis of diabetes, hypertension, or behavioral issues, a secondary diagnosis of obesity is often not given. The lack of an obesity diagnosis when clearly indicated leads to lack of total care for the obese adolescent. Barriers to the lack of an appropriate diagnosis may be time constraints, reimbursement, or discomfort in discussing the topic (Reyes, 2015). A CPG will provide the Pediatric Nurse Practitioner (PNP) with specific criteria to address the primary diagnosis of overweight or obesity. Once a diagnosis is made, this CPG can provide a

clear and concise guide for the team of healthcare providers in providing more comprehensive care.

Algahtani & Elahmedi, (2015), found that a clinical pathway with a multidisciplinary approach with family involvement helped deliver better care with 291 of the 659 patients needing bariatric surgery. A multi-disciplinary approach with a focus on improving eating habits and physical activity found positive results in a study of school children (Rodrigues, Alves, & Amorim, 2015).

The newest research indicates obesity continues at an epidemic level, especially among severely obese adolescents (Skinner, Ravanbakht, Skelton, Perrin, & Armstrong, 2018). Conventional treatments such as bariatric surgery, low-fat low-carb diets, and lack of behavioral modifications have not been successful on a long-term basis (Ludwig, 2018). Given the global nature of the problem, it was necessary to address obesity in this rural clinic in hopes of creating better outcomes for our patients. Because of the numerous life-long physical and mental health consequences associated with this disease, identifying strategies to prevent and treat excess weight gain via a clinical guideline that was consistently used by the team has become a top priority in this healthcare facility.

This doctoral clinical practice guideline project is important to the field of nursing because it seeks to improve patient outcomes of the rural adolescent obese patients, and by doing so, assist them in leading a more healthy and productive life. The project served as support for the healthcare professionals who work at the clinic and who currently have no guideline on how to assess, treat, and refer these overweight adolescents.

Purpose

Healthcare professionals, including nurses, play a significant role in the assessment and treatment of overweight and obese adolescents. Obesity is a global health concern with obesity rates rising over the past decades in both developed and developing countries (Wishner, 2019). Curtailing the rise in obesity is prioritized in the World Health Organization's (WHO) global action plan on prevention and control (WHO, 2018). There is overwhelming evidence that overweight/obese children and adolescents face social, psychological, and physical problems as a consequence of their weight.

Obese/overweight children are more likely to suffer from being bullied in school, feeling the effects of anxiety and depression, face social discrimination, and report low self-esteem compared to healthy weight counterparts. Furthermore, overweight and obesity has been linked to poor health outcomes, which can negatively impact the quality of their life. Being overweight contributes to other diseases, which cause morbidity, mortality, and health related quality of life issues. Obese children and adolescents are more likely to become obese adults and as such, experience an increase in severe disease risk factors compared to those individuals of a healthy weight. Thus, it is imperative early diagnosis followed by a consistent treatment plan be implemented by healthcare personnel.

Evidence-based interventions can significantly increase the reduction of obesity and improve nursing practices.

Discussion with the PNP at the practicum facility determined a need for an organized method in the diagnosis, referral, and treatment of overweight and obese adolescents. Presently, the PNP discusses obesity with the child and/or their parents, but

the obesity diagnosis is not consistently added to the patient chart. Therefore, referrals are not made to the clinic behavioral therapist, nutritionist, or physical therapist. If the overweight adolescent presents to the clinic for a diagnosis such as diabetes, hypertension, or another co-morbidity, a plan of care including multidisciplinary interventions with family involvement needs to be implemented if better patient outcomes are to be achieved. The purpose of this CPG was to create a standardized clinical guideline that will improve health practices through evidence-based interventions, and which may eventually result in better outcomes for the adolescent overweight or obese patients who reside within the community of this rural clinic. The focus question for this CPG project was: Will the development of a CPG improve the healthcare process for a more consistent method of diagnosis, referrals, and treatment in obese adolescents?

Nature of the Doctoral Project

The objective of this DNP project was the creation of a clinical guideline that will improve the practices related to the diagnosis, referral, and treatment of adolescent overweight or obese patients at rural community clinics. A secondary goal was to increase awareness among healthcare personnel at the clinic, of the value of inter-professional care by prescribing to a consistent method of caring for these patients and their families. The expert team at the clinic includes the PNP, Behavioral Therapist, Dietician, and Physical Therapist who are all interested in collaborating to improve the health of this population. Appropriate protocols and guidelines will provide a seamless transition to the care of obese adolescents as the Doctor of Nursing Practice (DNP)

Essential VI states “healthcare professionals must facilitate collaborative team functioning and overcome impediments to inter-professional practice.” (American Association of Colleges of Nursing (AACN), 2006, p. 14). DNP graduates must be prepared to collaborate with teams and assume leadership of teams (AACN, 2006, p. 14).

Objectives for this project were:

1. To develop an evidence-based clinical guideline for consistency in diagnosis, referral, and treatment in the clinical practice area.
2. To introduce an evidence-based clinical practice guideline to the healthcare team.

Firstly, evidence-based literature was reviewed to obtain information regarding the effectiveness of clinical guidelines that are used with this population. The evidence was examined, analyzed, compared, contrasted, and synthesized to determine its relevance to the project problem. The evidence was organized and analyzed using the Johns Hopkins Nursing Evidence-based Practice (JHNEBP) Evidence Rating Scales model as a problem-solving approach to clinical-decision making (Newhouse et al, 2005).

The next step was to involve the other healthcare professionals in the creation of the clinical guideline. The CPG must specify target BMI for referral to all therapists to ensure a collaborative effort was made towards weight loss. The parent or guardian is also an integral part of the treatment plan. Because they are with the child daily, they can assist with nutritional needs, physical activities, and place limits on screen time. Another expectation was to constantly reinforce current professional knowledge related to obesity and its prevention and treatment with the patients, parents, and other healthcare

professionals. All these factors can influence the weight of the child. This DNP student provided teaching to the clinic's providers and nurses so that the CPG could be put into practice. The guideline was created to be multidisciplinary and collaborative in nature.

Significance

Promoting healthy eating, physical activity, and limiting sedentary activity are examples of diabetic primary prevention strategies. Secondary prevention, which should be initiated by healthcare providers includes early detection of obesity through BMI monitoring and treatment referrals in children and adolescent youth. This project aimed to create a clinical practice guideline that would result in a consistent method of these young patients that are being assessed, treated, and referred for other services. An improvement in the way the adolescents are treated requires the participation of the entire team to be successful. Stakeholders for this project included not only the rural healthcare team at this clinic, but also the adolescents and their caregivers. The stress and apprehension for the team that was anticipated due to a practice change was decreased as each discipline worked to give a holistic approach to care. Inter-professional collaboration was utilized to give the adolescent better healthcare outcomes.

The significance of the CPG was weight reduction by focusing on all aspects of adolescent health. The creation of a guideline for the providers and nurses can lead to consistent care that could improve the health of the adolescent. The nurses were educated regarding BMI and given a guideline to promote collaboration with the team at the clinic. Family involvement is important for a sustainable change in care. Parenting, with guidance from the providers and nurses, will teach food quality, how to model behavior

by using the “if you don’t do it, they won’t do it” model, and protection of the home environment with healthy foods (Ludwig et al. 2012, Ludwig et al., 2018). The adolescent learned specific ways to change their behavior by learning how to deal with bullying, making nutritious food choices, and finding physical exercises to enhance health.

The nurses at the clinic would strengthen their role in learning collaboration with other disciplines. With the CPG, the providers and nurses will provide teaching to the adolescent, the parents, and other disciplines in the clinic. This protocol promotes the total health of the family and promotes collaboration with the schools, workforce, and community by promoting empowerment and encouragement.

It is important when creating and implementing any doctoral project, that evidenced-based intervention be grounded in the desire to improve patient outcomes (AACN, 2006). This project resulted in a quality undertaking that will contribute to improving nursing practices and contribute to the body of professional knowledge. Transferability of this protocol could be used by mental health professionals, schools, and community involvement. The CPG could be dispersed to comparable practice sites as it addresses a current and global problem.

Walden’s mission is to provide career professionals with the opportunity to effect a positive social change. A positive social change is characterized by actions that transform different attributes of a society. Being able to identify the needs of the overweight or obese adolescent and derive evidence-based interventions to assist in the improvement of their health, will generate a culture of change that results in improved

patient outcomes. This CPG provides that opportunity by promoting a cultural change in the clinic, the home, and the community. From a policy standpoint, the CPG provides nurses the platform to keep children healthy.

Summary

In section one the problem and nature of this project was introduced. The focus of this project was described as the development of a new guideline for diagnosing and treating the obese adolescent in a consistent manner, which will allow for better patient outcomes. The potential impact the project will have on the patient, family, community, and nursing practice was explained. Section 2 of this project will describe models, concepts, and theories relevance to nursing practice, and to local background context. The next section also provided clarification for the role of this student in the relationship to this project along with motivation and any potential biases.

Section 2: Background and Context

Introduction

Despite height and weight being routinely recorded on growth charts for all adolescents included at this rural clinic, for overweight or the obese adolescent, BMI is not routinely documented in the medical records. Nor are these young patients consistently treated for their weight issues, including referral to other healthcare personnel at the clinic. This lack of documentation of BMI in adolescents by the healthcare provider has resulted in poor patient outcomes in relation to weight reduction and a healthier lifestyle. In several studies (Puhl & King, 2012; Jackson et al., 2019; Swallen et al., 2005) BMI documentation has been found to increase documentation of the diagnosis of overweight/obesity and lead to better treatment modalities, with the U.S. preventative services task force recommending using BMI to screen for obesity in all children and adolescents over the age of six years. Although a variety of health-related initiatives have been undertaken at this rural clinic, the lack of a consistent treatment modality has been the norm.

This DNP project was developed as an evidence based clinical practice guideline for the healthcare team that resulted in consistent diagnosis and treatment plan for the obese adolescent. The lack of a clinical practice guideline has created a gap in practice with a lack of consistent care for this population. Given this void, the DNP student collaborated with the healthcare professionals at this rural clinic to develop a CPG to close this gap of diagnosis and treatment by the initiation of family approach along with

the involvement of the providers and nurses to improve patient outcomes and increase the overall quality of care.

In this section, the theoretical model chosen to guide the project was explored and direct evidence-based practices were analyzed. Not only will concepts, models, and theories be identified and discussed, factors that contribute to adolescent obesity were explored in the context of the practice question, which is: Will the development of an EB-CPG improve the healthcare process for a more consistent method of diagnosis, referrals, and treatment in obese adolescents? Additionally, the relevance of the project for nursing practice was discussed and the local background and the local context of the problem was explained.

Concepts, Models, and Theories

The primary goal of the CPG was to generate an operational change that would result in better patient outcomes for overweight and obese adolescent youth, as evidenced by a more collaborative team approach and increased referrals for the increased weight diagnosis. Obesity in young people is a problem that results in a slew of complications including those impacting the physical and social-emotional health of the child. Given the significance of implementing interventions sufficiently and successfully, the Health Belief Model (Gozum & Capik, 2014) and the Transtheoretical Model (Prochaska & Velicer, 1997) were employed. These models were chosen because both the health belief model (HBM) and the transtheoretical model (TTM) can be used to influence the patient with the assistance of parental engagement.

The HBM is an intra-personal theory relational to characteristics and behaviors that guide the knowledge, beliefs, personality traits, and skills of the individual (Arrington, 2019). This model has shown to have positive effects on lifestyle modification. With this model parents have a fundamental role in the maintenance of their child's weight (Abdeyazdan, Moshgdar, & Golshiri, 2017). The health belief model was developed in the United States in the 1950s by Godfrey Hochbaum, Irwin Rosenstock, and colleagues at the US Public Health Service (Edburg, 2015). One significant change to the model was made in the 1970s, when the concept of self-efficacy, meaning the confidence a person feels in their ability to carry out a behavior, was added to the model. The health belief model is used to study a wide variety of other health behaviors, including smoking, physical activity, sick-role behavior, and the management of chronic diseases such as obesity and diabetes. This model contains the following components: perceived threat, perceived benefits, perceived barriers, cues to action, other modifying variables, and self-efficacy. The components work together to influence an individual's choice to change their behavior or address a health problem. This model was appropriate for the project because if an adolescent and his or her parents believes that they are at risk of a health condition with serious consequences, they will be more likely to take action. If the individual feels they will benefit and reap positive results by following a specific plan of action, including lowering the risk of disease, the more likelihood the plan will be followed.

The transtheoretical model by Prochaska and DeClemente (1983), was an appropriate model to use for this project because it measures an individual's readiness to

change their behaviors. There are five stages of change – precontemplation, contemplation, preparation, action, and maintenance. The transtheoretical model also looks at perceived susceptibility, readiness to change, and perceived benefits and barriers. Family dynamics and demographics are noted to be beneficial to getting individuals engaged in higher levels of functioning, including greater income, maturity level, or motivational readiness. This model suggests patients will change their behaviors to avoid illness, or get well, if already ill, if they perceive that specific health action will prevent or cure illness (Schmied, Chuang, Madanat, Moody, Ibarra, Ortiz,...Ayala, 2018).

An individual in *precontemplation* would not diet or make better nutritional choices and has no plan to start addressing their weight. Individuals may be in this stage because they are uninformed or under-informed about the consequences of obesity; or, they may have become discouraged in their ability to lose weight because of several previous failed attempts. An adolescent in *contemplation* does not currently address their weight issues but has plans to do so in the near future. An adolescent in the *preparation* phase has plans to start dieting and has taken initial steps towards this goal. These are the children who have taken action recently such as curtailing calories, engaging in planned exercises, spending less time on video games, or seeking medical help to help lose weight. Finally, individuals in the *maintenance* stage have been engaged in serious activities to reduce their weight for an extended period. These adolescents are less tempted to relapse into inactivity and are increasingly confident that they can continue to engage in being able to maintain a healthy lifestyle and good weight control (Kann et al., 2013).

The barriers this model incorporated could be demonstrated by low engagement, the inability to see the program as relevant, lack of a readiness to change one's own health, or competing priorities. The transtheoretical model has been a tool for guiding inter-professional collaboration in organizations as well (Keshmiri et al., 2017).

Terms

Adolescent: transitional stage of children ages 12-18 years old.

Behavioral health: behaviors that prevent illness, promote health, and manage disease.

Body mass index: a weight-to-height ratio, calculated by dividing one's weight in kilograms by the square of one's height in meters. BMI of 27.3 or more for women and 27.8 or more for men (National Institute of Health).

Childhood obesity: a condition where a child is significantly overweight for his or her age and height. Defined as a BMI at or above the 95th percentile of the Center for Disease Control sex-specific BMI-for-age-growth.

Childhood overweight: a condition where a child has a BMI at or above the 85th percentile and below the 95th percentile for children and teens of same sex and age.

Clinical practice guideline: a set of guidelines used to assist in administering medical technologies and procedures using evidence to guide the steps.

Guardian: legal guardian relationship between adult and child who is not the parent but does not end biological parent's relationship.

Healthcare professional or provider: a health practitioner or health care provider who provides a systematic way to treat people, families, or communities.

Nutritional counseling: one who helps people to set achievable health goals and teaches various ways of maintaining these goals throughout their lifetime.

Parent: biological legal guardian of a child 0-18 years old.

Relevance to Nursing Practice

Nursing is a professional practice that involves protecting the patient with the goal of improving their health (American Nurses Association, 2018). Nurses have the responsibility to guarantee quality care and optimal patient outcomes. Obesity, a major public health concern in developed countries, is rapidly increasing up to 25% in some populations (Abela, Bagnasco, Arpesella, Vandoni, & Sasso, 2014). Some causes of this are sedentary lifestyles, poor nutrition, and screen time. These lifestyle habits can promote seizures and postural disorders, poor school performance, and poor sleep quality (Abela et al., 2014). The United States continues to have a serious public health epidemic of childhood obesity even with the focus on obesity (Miyazaki & Stack 2015; Ogden et al. 2014). To improve the quality of care and reduce the likelihood of chronic disease and psychosocial illnesses related to obesity, it is imperative that evidence-based interventions related to adolescent weight control be addressed by providers and nurses. The doctoral project was a CPG that had the goal of improving inter-collaboration of the healthcare providers by increasing consistent assessment and referral of obese adolescent by use of a new clinical guideline to be utilized by a rural clinic. Since nurses have more interaction with patients than other healthcare professionals and are the health workforce with the highest number, their role in prevention is of the utmost importance. The American Nurses Association affirms that nurses' responsibilities are varied and include

evaluating patients who are at a risk, planning, and implementing care, and evaluating the effectiveness of clinical initiatives (Quigley & White, 2013). The creation of a clinical guideline and presentation to the staff to assist in the assessment and referral of adolescents who are overweight or obese was the goal of this project.

Family involvement was an integral part of this CPG. The CPG used a modified family management style framework developed in 2015 by Jang and Whittemore. This study concluded an understanding of the family factors and attitudes that are an important contribution in promoting development and improving health behaviors in adolescents and parents (Jang & Whittemore, 2015). To maximize the outcomes for the adolescent, this rural health clinic needs a CPG for diagnosis, referrals, and treatment within the clinic and have a family approach.

Several studies have summarized different childhood obesity treatments. Ones with the most efficacious treatments include a family approach with changes in daily life routines. A multidisciplinary team approach along with family cooperation with an intensive treatment of 17 weeks of meetings was used in an Obesity Outpatient Clinic (Skjakodegard, Danielson, Morken, Linde, Kolko, Balantekin,...Juliussen, , 2016). The multidisciplinary team approach along with family involvement was used to help close the gap-in-practice for this clinical guideline. Parental involvement was successful for the adolescent weight loss by using the family-centered approach to increase parental motivation, confidence, and concomitant parental weight loss (Most Hojgaard, Teilmann, Anderson, Valentiner, Gamborg,...Holm, 2015). These studies demonstrate for the need of a clinical guideline that involves the family in assisting their child in weight control.

Obesity in children is associated with long term health risks, such as type 2 diabetes, asthma, hypertension, (Bass & Eneli, 2015) and other disorders that negatively affect the child's mental health and psychosocial development (Small & Aplasca, 2016). Weekly counseling for the first month followed by a monthly counseling session for the next 11 months (Weijden, 2019) serves as behavioral modification with plans to change lifestyles to enhance the success of healthy choices. The CPG behavioral counseling focused on bullying and stigmatism and with guidance of how to positively handle situations that may arise. Other recommendations of evaluation, recognition, and initial management of overweight and obesity in U.S. military medical treatment facilities use BMI value along with counseling derived from the American Academy of Pediatrics recommendations (Dickey et al., 2017). These recommendations provide well-child visit assessments of BMI percentiles with nutrition, and physical activity to deliver age appropriate education regarding obesity (Dickey et al., 2017). The CPG input of the BMI, height, and age of the adolescent will cause a trigger of the information to place the child on the guideline. This will provide the continuity of care needed for this population of adolescents with assistance from their parents.

Local Background and Context

According to the World Health Organization, the number of children and adolescents with obesity has increased from 11 million to 124 million during the past four decades (World Health Organization, 2018). Although variations in the prevalence of childhood obesity exist across countries, it is now apparent that childhood obesity is a major public health concern worldwide. Lifestyle interventions to promote healthy diets

have always been the first-line approach for treating youth with obesity. Because childhood obesity is a strong predictor of adult morbidity and early mortality, early intervention is essential to prevent and reverse obesity-related risk factors in youth.

The project will close the gap in practice at a rural community clinic and improve the advanced nursing practices in the care of the overweight and obese adolescent. The CPG was created for use in a rural health clinic in southwest Arkansas. This is the only rural health clinic in this small city. Many of the clinic patients are Hispanic, African American, and/or low socioeconomic means. A wide range of educational backgrounds come to the clinic for care. The pediatric nurse practitioner has a clientele of about half of the total patients that come to the clinic. Well-child visits, sports physicals, and chronic health conditions in the pediatric population are all cared for at this clinic. Literature reviewed demonstrates the need cost-effective interventions for adolescents 12-18 years of age that have a BMI at or above the 85th percentile (Thury & de Matos, 2015). Chronic conditions such as hypertension, diabetes, and other chronic conditions are sometimes aligned with obesity. This guideline aims to provide a streamlined approach to all providers and nurses that are within the clinic. These resources along with a family approach will give the adolescent the best chance of success in health. The clinic strives to provide high quality health services to patients with a focus on excellence. It is expected that the creation of a new clinical guideline geared toward the diagnosis, referral, and treatment of the adolescent patient who exhibits a higher-than-average BMI, can be implemented at other like clinics who serve a similar population.

The Walden School of Health Sciences mission is to provide innovative educational programs using a scholar-practitioner model to equip a diverse array of learners as social change agents who will promote, educate, motivate, and advocate for healthy communities. The strategic vision of Walden is to be recognized as a preeminent college of health sciences producing innovative leaders who engage in critical and creative thinking to address the health needs of local and global communities through the delivery of health care services, research, and education (Walden, 2019). This CPG sought to equip the providers at the rural clinic to be a social change agent and apply the vision of Walden through the delivery of services of healthcare.

The CPG was based on an inter-professional education model by Keshmiri et al. (2017). Effective planning by the team was needed to implement the protocol. The World Health Organization states childhood obesity as one of the most serious health challenges of the 21st century (Skjakodegard et al., 2016). If the adolescent receives appropriate and consistent training before becoming adults, the reduction of cost of chronic conditions and long-term care could be decreased (Abdeyazdan, Moshgdar, & Golshiri, 2017). The literature has introduced inter-professional collaboration as a key factor of providing patient-centered care and improving health outcomes (Keshmiri et al., 2017). This new clinical guideline should decrease healthcare costs and hospitalizations by promoting health within the community. Walden University's mission is dedicated to promoting positive social changes and this project will reflect this project's goal (Walden University, 2019).

Role of the DNP Student

As a master's prepared nurse and educator that has worked in the pediatric setting for most of my career, I am seeing more overweight and obese children on a consistent basis. It is well known that obesity, particularly abdominal obesity, is associated with high blood pressure and dyslipidemia in children and adolescents, independent of BMI. The sedentary lifestyles, eating habits, and behavioral problems that children have enhance their chances of becoming adults with chronic conditions. Adolescents with obesity are at increased risk for adverse health conditions, both physical and mental, including elevated blood pressure and cholesterol, stroke, heart attack, depression, body dissatisfaction, binge eating, and engagement in disordered weight control behaviors. Because of the numerous physical and mental health consequences associated with obesity, identifying strategies to prevent and treat excess weight gain has become a top priority in public health. The underlying premise for this doctoral project was that, with correct treatment, if there is a change at the adolescent age, when young people are able to begin making their own choices, maybe there may be an opportunity for these children to begin making better decisions regarding their own health.

The clinical site for my DNP practicum was this rural health clinic. My motivation for this topic was the very obese adolescent clients who just had conversation with the PNP and given some pamphlets to read without there being a solid guideline to lead providers, the family, and the patient. My role in this project was defined as an educator of the CPG to the providers and nurses at this clinic. I provided organization and systems leadership for CPG for the healthcare providers of this rural clinic. My interest in

this project was to contribute to a process by which better patient outcomes will occur for this designated population. Understanding how obesity can lead to life-long chronic conditions and psychosocial devastation in some young people, my hope is that through the intervention, the clinic will be able to put into practice a guideline that changes the manner in which the overweight and obese adolescent patient is cared for.

As an advanced practice nurse, I am in a position to make a positive impact on the health and wellness of the adolescent youth with weight problems. This reflects the responsibility of a doctoral-prepared nurse, also (AACN, 2006, p. 14). AACN Essential II (AACN, 2006, p. 10), emphasizes improved patient outcomes via inter-professional collaboration with knowledge of health sciences, nursing practice, policy development, and system dynamics.

Summary

In this section, the two theoretical models which would be the foundation for the project were identified. The contribution to the practice of nursing was supported by the evidence presented, which also supports the interventions. Definitions for the project were given. Finally, the role of the DNP student was discussed. In Section 3 the discussion will focus on the processes that were utilized for collection and analysis of evidence that has guided this CPG to connect the gap-in-practice and practice-focused question.

Section 3: Collection and Analysis of Evidence

Introduction

Obesity is a global health issue and the complexity of obesity is particularly apparent during adolescence. Obese adolescents tend to experience a variety of psychological and social problems, including an increased risk for depression and low self-esteem, which can negatively impact their quality of life (Skinner, Ravanbakht, Skelton, Perrin, & Armstrong, 2015). Adolescent obesity is also concerning because it is associated with a higher risk of developing long-term adverse health consequences such as type 2 diabetes and cardiovascular disease and often the habits that cause obesity extend into adulthood (Skinner et al., 2015). This protracted exposure to obesity can have a negative impact on individuals as well as families, the health care system, and society

Practice-Focused Question

Overweight and obese adolescents require multi-disciplinary clinical care for pediatric weight management if identified barriers to and enablers of adopting lifestyle behavior changes related to nutrition, physical exercise, sedentary activities, and sleep are to occur. Clinical practice guidelines provide methods to translate evidence into practice settings to improve healthcare outcomes (Walden, CPGD, 2017). This proposed CPG will aid in the treatment of adolescent patients with a BMI at or above the 85th percentile. The goal for this project was to improve patient outcomes for these patients with the use of a CPG.

The practice-focused question that was addressed in this clinical guideline is: Will the development of a CPG improve the healthcare process for a more consistent method of diagnosis, referrals, and treatment in obese adolescents?

Inter-professional multidisciplinary healthcare with family involvement is supported by the literature to decrease weight, increase activity, and change eating habits to make a positive difference on overweight adolescents (Jang & Whittemore 2015; Keshmiri et al., 2017; Schmied et al., 2018). Collaboration with multiple healthcare professionals includes responsibility, accountability, coordination, communication, cooperation, reciprocal trust, and respect (Bridges et al., 2005; Keshmiri et al., 2017). The project of a clinical practice guideline development incorporated the inter-disciplinary approach that contributed to a more consistent treatment of obese patients.

Sources of Evidence

The objective of the DNP project was the development of a clinical practice guideline that would result in a clear process of inter-professional collaboration in treating overweight or obese adolescent whose BMI is at or above the 85th percentile. It was expected to result in a new clinical guideline that would aim for more consistent assessment, diagnosis, and referral by healthcare providers and nurses who work with these children.

The first stage of the project was to review current evidence-based literature pertaining to the subject, and by examining, analyzing, comparing, contrasting, and synthesizing the information, to better understand current practices and how they may relate to the practice-focused question. The overarching aim of this literature review was

to present an overview of current literature. Of the articles listed in the literature review (See Table 3 Appendix C) 36 of the articles were used. Those excluded were not relevant for this project. The articles used were relevant to the translation of evidence into clinical practice guidelines, treatment plans for obese children, and different approaches to this problem.

Current literature regarding clinical treatment of obese adolescents, such as treatment in hospital-based clinics (Gilliland, Clark, Kobrzynski, & Filler, 2015), utilizes various tools for weight management (Weijden, Dreesen, Faber, Bos, Drenthen, Maas,...Knops, 2019), including family-based programs (Schmied et al., 2018) and school-based programs (Rodrigues et al., 2015). These studies were relevant to the project because they demonstrated that there is not one single approach to adolescent obesity, but rather that a multi-prong approach that is needed. Thus, a multi-disciplinary team was involved in the clinical guideline development, along with the specific treatment modality that was provided by each professional. Inter-professional collaboration allowed the different disciplines to accept and understand each other's role and understand the necessity of teamwork (Keshmiri et al., 2017). The healthcare team at the rural clinic met at least once a week for the first month then monthly thereafter to implement the completed guideline in the hope of it yielding positive outcomes. Although this writer was interested in the results, she was not involved in the actual implementation of the guideline.

The Cochrane Database of Systematic Reviews, the Cumulative Index for Nursing and Allied Health Literature (CINAHL), ProQuest, and PubMed were databases

searched. Boolean phrases were all used in these search engines. Search terms included clinical guideline, adolescent obesity, multidisciplinary team, nutritional interventions, behavioral therapy, evidence-based practice, and clinical pathway. The following limitations were placed on these searches: peer reviewed, the majority of the publication dates from 2015-2019, and adolescent obesity. Government websites were also used to obtain current guidelines, relevant statistics, and data related to this subject.

The DNP project is an evidence-based project that was employed for collaboration effectiveness. The Inter-professional Collaborator Assessment Rubric (ICAR) was developed by using a competency statement and a rubric created by a Delphi survey in a study by Curran et al., 2011; Keshmiri et al., 2017. This relates to the project as it emphasizes the importance of effective planning for implementation of an inter-professional educational (IPE) program for improving collaboration in the clinic setting (Keshmiri et al., 2017). The ICAR was developed by an inter-professional advisory committee of educators from medicine, nursing, and rehabilitations sciences (WHO, 2010). This rubric has six components: Communication, Collaboration, Roles and Responsibilities, Collaborative Patient/Client-Family Centered Approach, Team Functioning, and Conflict Management/Resolution. The acceptance of each other's roles and understanding the necessity of teamwork is essential in achieving the desired healthcare outcomes (Keshmiri et al., 2017). A significant improvement of inter-professional collaboration was found in this particular study (Keshmiri et al., 2017).

The importance of a consistent diagnosis for patients who are overweight and/or obese was explored on the chart that was discussed in studies by Dickey et al.,(2017) and

Reyes et al., (2015). Similarly, with this project, the diagnosis of obesity with the BMI measurement in the clinic's computer program will trigger the implementation of quality measures of multidisciplinary care as was noted in Reyes et al., (2015). Completion of billing and coding for condition, discussion of BMI with family, referrals, and lab tests are important pieces of inclusion criteria (Busch et al., 2018) and they were duplicated in this project. When this information is entered into the patient health record, the plan was that the healthcare team would then be alerted to the CPG for care of this individual. Challenges of unfamiliar coding, busy clinic, and lack of reimbursement by third-party payers were an obstacle in studies by Gibson (2016), Schmied et al., (2018), and Skjakodegard et al., (2016) and would need to be addressed by the multidisciplinary team.

Family-based approaches to weight loss are found to have the most success (Abdeyazdan et al., 2017; Jang et al., 2015; Ludwig et al., 2018; Most, 2015; Schmied et al., 2018; Skjakodegard, 2015). Lifestyle interventions involving parents and adolescents that use non-coercive methods and behavioral changes in daily life routines have had promising long-term effects on obesity (Skjakodegard et al., 2016). Because family-based behavioral treatments have demonstrated positive long-term effects compared to other treatments, it is imperative to ensure family involvement when treating one's obese or overweight child. Barriers to the family approach were found to be a high degree of family stressors, parent-adolescent conflict, lack of time and interest, interference with school schedules, and disappointment of amount of weight loss. This would be important to the CPG in working with the family to find solutions for success. Healthy modeling

from the parents and keeping the home a safe environment for healthy eating increase success for both the parents and the family (Skjakodegard et al., 2016).

The Family Management Style Framework was developed to understand family experience and functioning in chronic illness (Jang et al., 2015). This framework has been used on patients with dementia, and chronic illness such as spina bifida, congenital conditions, and childhood obesity. Family environment plays a fundamental role in the adolescent's behaviors including diet behaviors and physical activity. Parenting feeding patterns and role modeling are strongly associated with the adolescent's weight status and health-related behaviors (Jang et al., 2015). For this CPG, parental transitioning into a protective home environment, role modeling techniques, and empowerment of the healthcare team gives the adolescent the support and guidance they need for success. As part of a new clinical guideline, healthcare professionals at the clinic are involved in strategies to ensure the success of the entire family in meeting their loved one's health needs.

A qualitative examination of parental engagement by Schmied et al., (2018) included interviews with parents using open-ended questions. The parents were assessed for perceived susceptibility, readiness to change, perceived benefits and barriers, and program satisfaction. Low-engagement parents questioned whether it would benefit their child. High participation parents wanted to become healthier and to help their children to become healthier. Facilitation to attend by family support was the key factor of participation that yielded positive patient outcomes. Confirmation of the importance of readiness for change was the motivating factor (Schmeid et al., 2018). Relevance of this

study to the EB-CPG will be the motivation of all the disciplines to provide engaging and relevant strategies to follow.

The specific steps of creating the clinical practice guideline consisted of the following actions:

1. The CPG was presented, using the Inter-professional Collaborator Assessment Rubric (ICAR) assessment rubric to the team of providers. A pre-test of the ICAR tool was administered before training of the CPG using the rubric of six components of *communication, collaboration, roles and responsibilities, collaborative patient/client-family centered care, team functioning, and conflict management and resolution*. The acceptance of each other's roles and understanding the necessity of teamwork is essential in achieving the desired healthcare outcomes was discussed (Keshmiri et al., 2017). The study by Keshmiri et al., (2017) did show that the IPE model could significantly improve the inter-professional collaborative performance of the participants.
2. The purpose and aim of the CPG was introduced to the team. The DNP student, along with a clinic champion, led the healthcare team through the process of familiarizing themselves in use of the guideline.
3. The clinic champion will help guide the team when questions arise regarding the CPG to ensure needed adjustments are handled expeditiously and discussed with the entire team.
4. A post-assessment and evaluation of lifestyle behaviors using the ICAR rubric will be given after the use of CPG.

Once the creation of the clinical practice guideline is created and the completion of this DNP project, if this guideline is implemented by the team, the hope is that better patient outcomes for the adolescent overweight and obese patient will be reflected. A family management style framework by Jang and Whittemore, (2015), used theory analysis and synthesis to review literature on family-based programs. This was based on Bowen's family systems theory which posits that change in one family member can effect change in other's in the family (Kaplan et al., 2014; Jang & Whittemore, 2015). The factors were assessed using the parental influence and perceptions, rather than the perceptions of the child. This study indicated a need to explore the BMI with the parents of the child, followed by the evaluation of the perception of the parents regarding their perceptions of weight, diet, exercise, and obesity (Jang & Whittemore, 2015). Studies like this justify the needed involvement of parents in their child's weight control care.

The conversation regarding weight can be emotional for the patient as well as the consultant (McManamon, 2015). Helping the adolescent set goals of target weight and promoting self-management will be important for long term success. Goals of weight loss of 5-10% are generally a clinically effective target (McManamon, 2015). Non-coercive behavior of praise, self-monitoring, goal setting, contingency management, anticipating obstacles, and mindfulness are all ways for the adolescent to be prepared (Ludwig, 2012, modified 2018).

A quality improvement intervention used in several rural health clinics in one region were "Healthy Eating Active Living Telehealth Community of Practice" (Shaikh et al., 2015). Caregivers shared learning and developmental goals for continuous

improvement in childhood obesity and although was not be applicable to this CPG, it may be an option in the future. Currently clinicians and staff report the resources of this rural clinic tend-to be outdated and not readily accessible or not utilized sufficiently to engage the patient and parent group sharing. Interactive interventions are used in a study of a school nurse intervention of adolescents' knowledge of healthy eating using the "Let's Eat Healthy" program (Al-Yateem, Attra, AL-Yafei, Mohammed, & Mahmood, 2015). Eating behaviors and knowledge are analyzed by showing four interactive lectures followed by a questionnaire with questions regarding energy balance, my pyramid, portion size, and health snacking. This analysis was used in a school setting and delivered to 150 students in the intervention group and 150 in the control group where no program was delivered. The results fell within the low to moderate level of knowledge in both groups (Al-Yateem et al., 2015). The interactive lectures of nutritional counseling could be a component of the CPG by the adolescent self-administering the survey in their own homes due to time constraints.

The Traffic Light Diet was used by Skjakodegard et al., (2016). This diet uses a green light for foods that are good for weight control, yellow, use with caution, and red are ones to be avoided. Two other studies utilized the "5210" strategy to aid in weight loss (Kuhle et al., 2015; Gibson, 2016). This approach is a simple technique that uses the following concept: 5 fruits or vegetables per day, 2 hours or less screen time, 1 hour of physical exercise per day, and "0" or very little sugar sweetened drinks. This is a good tool that is easy to remember; however, for the complex obese adolescent, more extensive nutritional teaching will be recommended. Therefore, the CPG used the healthy eating

and activity together (HEAT) guideline provided by the National Association of Pediatric Nurse Practitioners (NAPNAP) (Reyes, 2015). This guide offers pediatric strategies using developmental and cultural considerations with useful information and resources (Reyes, 2015). When the CPG is fully implemented, it is expected the results will be compared and analyzed with patient outcomes from the previous months when no clinical guideline was being utilized.

Participants

Participants in this DNP project who will be content experts at the project site include a pediatric nurse practitioner, a Licensed Psychological Counselor (LPC), and the nutritionist, all of which gave input into the development of the evidence-based CPG, and who will oversee the implementation of the guideline. The expectation was that all employees at the clinic would be involved and that short-term goals that were successfully met would eventually reflect long-term outcome success (Kotter, 2018).

Protections

The project was a clinical guideline development project which was not implemented on any human subjects. The implementation participants were the experts in the healthcare field. The relevance of the guideline was the presentations of the guideline to the healthcare team. All doctoral projects of Walden University are required to have ethics approval from the Walden IRB (See Appendix B). The CPG of this student involved anonymous questionnaires from the nurses, PNP, behavioral therapist, nutritionist, and LPNs. The literature and archival data fell within the parameters of the pre-approved Site Agreement. The name of the partner organization and its location were

not identifiable. No conflict of interest of the team members affected the clinical guideline development.

Analysis and Synthesis

The ICAR evaluation was conducted to evaluate the inter-professional collaboration and the practicality of the CPG. The prevalence of outcomes from the ICAR evaluation prior to the education was compared with the ICAR evaluation after the education to the healthcare providers. The participants were made aware that by participating in the ICAR evaluation implied informed consent. Data was gathered in an envelope with no identifications on the evaluation forms. This information was kept in a locked desk of a locked office until the project was completed, then will then be shredded, and destroyed.

For analysis, an Excel program and the Statistical Program for Social Sciences (SPSS) was utilized to assure accurate results. The findings were displayed by written analysis and through various other means, including tabulations, graphs, and percentages. This evaluation information was kept on a laptop that was password protected and stored in a locked office when not in use. Data was also stored on a USB drive that was password protected and kept in a locked desk in a locked office. The data was only aggregate reported with no identifying information.

Summary

In order to combat adolescent obesity, rural health clinics are challenged with the task of developing methods to take care of certain populations. The multidisciplinary care for the obese adolescent is important because an obese adolescent can become an

overweight adult that can have chronic multiple co-morbidities. This section included description of how the problem was addressed through the development of a clinical practice guideline that was expected to increase positive patient outcomes through the creation of a clinical practice guideline. Section 4 of this development contains findings, implications, and recommendations. Strengths and limitations of the project are also discussed.

Section 4: Findings and Recommendations

Introduction

Retrospective studies focus on the adverse events that obese adolescents experience when they are not adequately diagnosed with obesity and any comorbidities (Alquahtani et al., 2015; Schmied et al., 2018). Healthcare team members often overlook environmental forces that can contribute to weight gain in adolescents. The local problem in this community was the lack of successful interventions that were being consistently utilized to treat obese adolescent patients in this rural clinic. The purpose of the project was to improve diagnostic and treatment planning and referral via the creation of a clinical practice guideline for adolescents in a rural practice clinic. The local gap in practice was that there was a lack of attention to evidence-based patient care management of obesity occurring among adolescent-patients with obesity. The guiding practice focused question for this project was: Will the development of a CPG improve the healthcare process for a more consistent method of diagnosis, referrals, and treatment in obese adolescents? This question is important because the focused question in a project considers the significance and relevance of a study's problem and purpose (Gray, Grove, & Sutherland, 2017). The failure to adequately treat obesity displayed in adolescents has been associated with poor patient outcomes (AHRQ, 2009) from a lack of consistency in diagnosis, treatment plan, and referral system for these children and their families.

For this project, it was imperative that a major determinant of the evidence be evidenced-based literature. Scholarly and peer-reviewed scholarly articles were reviewed, compared, contrasted, and synthesized. The creation of a standardized clinical practice

guideline (See Appendix A) to improve health practices through the team implementation of evidence-based interventions was aimed to promote positive-outcomes for the overweight or obese adolescents and the family. The outcome yielded an evidence-based clinical practice guideline that could be used to improve education of the healthcare providers at this rural clinic in identifying, diagnosing, treating, and referring adolescents presenting with obesity.

Evidence was obtained by searching the Cochrane Database of Systematic Reviews, the Cumulative Index for Nursing and Allied Health (CINAHL), ProQuest, and PubMed. Search terms included clinical guideline, adolescent obesity, multidisciplinary team, nutritional interventions, behavioral therapy, evidence-based practice, and clinical pathway. Limitations placed were peer-reviewed, publication dates 2015-2019, and adolescent obesity. The peer-reviewed scholarly articles were published in the English language only and were full text. Statistical government websites for current guidelines and relevant for subject related information were used.

Prior to completing this project, it was hoped that a guideline would provide the healthcare team with guidance for action, empower them to act by increasing their self-efficacy, and improve the interdisciplinary communication and teamwork skills (AHRQ, 2009). Besides the creation of a clinical guideline to treat adolescent obese patients, the purpose of the project was to educate the healthcare team in utilizing the guideline, thus increasing the team's situational awareness of the environmental factors, which can contribute to a patient's obesity.

Once IRB approval #10-14-19-0577157 (Appendix B) was obtained from Walden University, the guideline was developed using adaptation of the Academy of Pediatrics Guide for Healthy Weight Management American Psychological Association (APA) guidelines for obesity of pediatric patients. A meeting was scheduled with the healthcare team at the rural health center. This strategic face-to-face meeting was held to discuss the disparity of care of the obese adolescent population in our area. The concept of inter-collaborative care was also a major focus. This type of care was needed because obesity is such a diverse illness. The Inter-professional Collaborator Assessment Rubric (ICAR) assessment rubric was developed by an inter-professional advisory team of educators from medicine, nursing, and rehabilitation sciences (World Health Organization, 2010). It employs the concept of nutrition, physical exercise, and emotional aspects of care.

After reviewing the evidenced-based literature, the team reviewed the draft of the guideline and provided comments to consider for when the implementation takes place. The guideline (see Appendix A), will be used for eight weeks to determine whether it adequately addressed the clinical practice question: Will the development of a CPG improve the healthcare process for a more consistent method of diagnosis, referrals, and treatment in obese adolescents? After the eight weeks, the clinic will be able to collect and analyze the data at their discretion.

Findings and Implications

It is imperative that obese adolescents are accurately assessed, treated, or referred on to specialists as necessary to ensure life-long illness and disease are not a part of their growing life (Keshmiri et al., 2017). Healthcare professionals often miss or ignore

warning signs that are objective and observable, which can indicate physiologic or biochemical deterioration in a patient, which can lead to a preventable healthcare crisis (AHRQ, 2009). Without proper assessment and treatment, poor patient outcomes and even death can occur. Thus, the importance of recognizing early children at risk for obesity-related illnesses, followed by the commencement of treatment is paramount for allowing the child to live a healthy life (Collado & Keller, 2016).

The practice problem addressed by this project evolved around a healthcare facility which serves a number of obese adolescents who were not being evaluated and treated in a consistent manner. Guidelines for this project were developed using the basic American Academy of Pediatrics guideline for obese adolescents. Once presented to the healthcare providers, recommendations were discussed and identified by this expert panel. The purpose of the project was to create a standardized clinical guideline that will improve health practices through evidence-based interventions, and which may eventually result in better outcomes for the overweight or obese adolescents who reside within the community served by this rural clinic. The guideline will be revised based on recommendations in collaboration with the professionals at this clinic. This CPG will then be presented to the end-users and experts to validate and ensure usability (Walden, CPGD, 2017).

The healthcare team at this clinic were informed of the project and their role in the IPE clinical guideline project. The requirements of the participants included that they must be over the age of 18, speak and understand English, and that they must be a healthcare professional. They were advised that if they agreed to fill-out the presented

assessment tool, they were in fact giving implied informed consent. All agreed to answer the questionnaire and participate in the evaluation of the CPG. Seven participants at this clinic participated. Data collected using the Inter-professional Collaborator Assessment Rubric (ICAR) which uses a 4-point Likert scale. Inter-professional collaboration was an important aspect of this guideline since was at the very foundation of ensuring these patients got care that yielded the best patient outcomes.

Clinical Guideline Creation

The next phase in the process was creation of the CPG. The healthcare team had suggestions and asked questions to ensure the guideline was as clear and consistent as possible. One theme that quickly surfaced as a priority was how to get the child's family to engage in the care of their adolescent. These youth have been shown to be more successful in improving their health when family is committed to making the home a safe and healthier place (Ludwig, 2018). (See Table 1).

The comments from the professional participants gave insight to some of the barriers they might have, as well as things which could work well. One barrier is the parental participation and ways to involve the adults. The participants gave some interventions that might help, such as how to eat healthier on a lower income. It was suggested that one way to improve with the adolescent may be to offer rewards, as well as using electronic applications as a way to interest the child.

Table 1

Suggestions from the EB-CPG Participants

Themes	Comments
Barriers to Success	“How do we help lower income families afford healthy foods?”
Strategies to improve uptake:	“Reward system, competition, games” “Most clinics do not have the availability of teams” “Community collaboration difficult to obtain”
Cost of Implementing Guideline:	“How would you bill for weight management for providers?” “Who would write a grant and how do we find the appropriate grant?”
Stage 1-Prevention Treatment	“Medicaid doesn’t cover dietician or physical therapist.”
Stage 4-Tertiary Care Treatment Stage	“Referral to weight management center good but nearest one is 2.5 hours and it can be difficult to get patients to travel if it is only obesity”
Family involvement:	“If parent doesn’t change, more likely the child will not change”
Facilitators to Success:	“Community activities may be difficult due to small town”
Algorithm:	“I would almost think we should intervene early with education to prevent the obesity in the first place”

An educational session was held with the goal of teaching the team how the guideline was to be correctly filled out. The healthcare team were given the ICAR instrument and a writing instrument. They were advised to place the instrument into a large envelope when completed. The participants then filled out the rubric. These were de-identified and placed in a large clasped envelope by the participants (See Table 2).

Table 2

Respondent Scores on ICAR Rubric 4-point Likert Scale

Item	Question	Mean
Communication		
Respectful communication		
1	Communicates in a confident, assertive, and respectful manner	3.1
2	Communicate opinion or pertinent views on patient care with others	2.85
3	Responds or replies to requests in a timely manner	2.85
Communication strategies		
4	Uses communication strategies (verbal and non-verbal) appropriately	2.85
5	Communicates in a logical and structured Manner	2.85
6	Explains discipline-specific terminology/jargon	2.42
7	Uses strategies appropriate for communicating with individual's impairments	2.57
Collaboration		
Collaborative relationship		
8	Establishes collaborative relationships with others	3.1
Integration of information from others		
9	Integrates information from others in planning and providing patient/client care	2.57
Information sharing		
10	Shares information with other providers useful for the delivery of patient/client care	2.71
11	Seeks approval of patient or designated decision-maker when information is shared	3.0

Roles and responsibilities		
Roles and responsibilities		
12	Describes one's own role and responsibilities with the team/patient/family	2.57
Role/Responsibility integration		
13	Includes the roles/responsibilities of other/all providers in the delivery of patient care	2.57
<hr/>		
Accountability		
14	Demonstrates professional judgement when assuming tasks or delegating tasks	2.85
15	Accepts responsibility for the failure of collaborative goals	2.57
16	Accepts responsibility for individual actions that might impact the team	3.1
17	Explains own scope of practice, code of ethics, standards and/or clinical guidelines in relation to collaborative patient-centered relationship	2.28
Sharing evidence-based/best practice knowledge		
18	Shares evidence-based or best practice discipline specific knowledge with others	2.57
Collaborative Patient/client centered approach		
Patient/client input		
19	Seeks input from patient/client and family	3.0
Integration of Patient/client beliefs and values		
20	Integrates patient's/client's/ family's circumstances beliefs and values into care plans	2.85
Information sharing with patient/client		
21	Shares options and health care information with patients/clients and families	2.71
Patient advocacy in decision-making		
22	Advocates for patient/client and family as partners in decision-making processes	3.00

Team Functioning		
Team functioning and dynamics		
23	Demonstrates recognition of the relationship between team functioning and quality of care	3.28
24	Demonstrates recognition of strategies that will improve team functioning	2.71
Shared leadership		
25	Shares leadership/alternates with others when appropriate for the discipline	2.85
Team discussion		
26	Demonstrates recognition of themselves as part of a team	2.85
27	Contributes to inter-professional team discussions	2.57
Conflict Management/Resolution		
Respect for different perspectives		
28	Seeks the perspectives and opinions of others	2.85
29	Seeks clarification when misunderstandings arise in a respectful manner	2.85
Active listening		
30	Uses active listening when others are speaking	2.85
Conflict management		
31	Uses appropriate conflict resolution strategies to manage and/or resolve conflict	2.71

The ICAR rubric consisted of six topics that have a total of 31 questions within the six domains. These topics are communication, collaboration, collaborative patient/client centered approach, team functioning, and conflict management/resolution. The low mean score for Roles and Responsibilities-Accountability suggests only

occasionally explaining own scope of practice, code of ethics, standards, and/or clinical guidelines in relation to collaborative patient-centered care (ICAR Rubric). The high mean score of 3.28 suggests a strong correlation of frequently demonstrating recognition of the relationship between team functioning and quality of care. The median score of 2.85-3.4 correlates with strong more than weak inter-collaboration within the clinic team (see Table 2).

Implications

Implications of this project for the healthcare team who cares for the pediatric obese patient is consistency in diagnosis and referrals. The increase in the team's knowledge regarding how to consistently treat these patients is evidenced by the adolescent being diagnosed at the first admission and then referred as per the CPG. Additionally, the confidence and knowledge gained by the team in using inter-professional collaboration should have a continuing positive impact on the project site's obese pediatric population.

Recommendations

It is recommended that the newly created CPG be reinforced by ensuring the healthcare team implement it. The goal for the CPG was two-fold:

1. To create an objective evidenced-based clinical practice guideline that identified the health risk assessment of obese youth so that a more consistent treatment plan could be initiated. This would result in consistency in assessment, referral, and treatment of these adolescent patients.

2. To guide the health team actions to ensure continued and comprehensive education of inter-professional collaboration for a healthier lifestyle for the obese adolescent patient and his or her family.

The new clinical practice guideline that was created and is now being implemented included the following components besides a direct purpose by impacting the scope of practice: the policy of treatment, the procedure for treatment and referral, operational definitions relating to the obesity in youth, and the protocol for continued follow-up. The new clinical practice guideline received positive feedback from the healthcare providers who are now using it, and includes their perceptions that the CPG is straightforward to follow and uncomplicated to use. This guideline provided the needed consistency in the clinic.

To reinforce the importance of family teaching in relation to healthy eating and physical exercise, a recommendation would be to offer strategies of preventative maintenance rather than treating the weight problem after the fact. This would lead to innovative ways to reach the adolescent such as improved education of the youth by using electronic devices and other sources. Fitbit and other mobile apps could be an interactive way for the adolescent to stay engaged in their own health. The rural clinic in this small city is fortunate that most of the children go to only one or two providers and they are usually consistent in this care. This allows the HCP to follow the trends of the adolescent and intervene earlier in their care. At this clinic, there are risks for other disease and illness besides diabetes that is seen in patients of all ages. While the lack of consistency in treatment and referral is a problem with other patients also, following the

model of creating a CPG that would specifically address their needs and education would be a recommendation after the success with this project.

The ICAR provided evaluation of the IPE within this clinic. The CPG will be useful in this rural clinic. The guidelines proposed or recommended solutions that will address the gap-in-practice is informed by the findings discussed above. The recommendation for this clinic is to use the CPG for data collection and then further evaluation.

Contribution of the Doctoral Project Team

The goal of this project was to increase the diagnosis, treatment, and referral of obese adolescent youth at risk for diabetes and to increase the healthcare team's situational awareness of educating and using the guideline for these patients. The project team at this rural health clinic in SW Arkansas was instrumental in the implementation of this DNP project. The inter-professional team has assisted in guiding the creation of this CPG with expertise and dedication of caring for the obese adolescent. The team members were provided with new knowledge, tools, and new ways to facilitate learning and increase self-efficacy to act for the benefit of these young patients. Collaboration with these experts provided insight into the clinic system and how the policies, state and federal law, and the cooperation with the family all combine to provide care at the clinic. I have knowledge of the care of the pediatric patient but did not have updated information regarding policies and procedures regarding care of this population. I am thankful for the personal and professional relationships that I have formed as a result of this multidisciplinary project.

Strength and Limitations of the Project

Strengths of the Project

Strengths of this project was the interest and compliance of the healthcare professionals in embracing and using the CPG. The inter-professional collaboration within the clinic was strong as indicated by the ICAR evaluation tool evaluation. This provided the adolescent and the family with the accountability needed to successfully lose weight and become healthier.

Limitations of the Project

There were several limitations of this project. Limitations of this study included a timeline that was short. A longer time period is needed to get a more definitive indication of the long-term success of the guideline. The sample size of healthcare professionals providing input on the CPG was also small. As such, the sample may or may not be representative of other rural clinics and thus may not be generalizable to every clinical situation. The sample size needs to be larger to provide more data of individuals in different levels. This can provide a better indication of success or failure of the guideline.

Another limitation is that this was only developed for use in one clinic in a rural area. More data will need to be collected from other small rural clinics in the area to find a working solution for all rural clinics. This will begin after this DNP degree. Another way to work with this topic is to begin work with schools, physical activity centers, and healthcare providers to build a coalition for this population.

Recommendations for Future Projects

Recommendations for future projects are to gather more data by working with more rural health clinics in the area. Continued research is needed to ensure the most recent evidence-based information is continuously integrated into the clinical practice guideline. As novel ways of treating and educating these youth, it would be important to ensure the guideline stays current and relevant. As the obesity of the adolescent is my primary focus, working with schools, physical activity centers, and others interested to build a coalition for the community to help combat the obesity problem in our area.

Another area of interest is children and teens with developmental disabilities that have obesity problems and who may need alternative methods of education to combat their weight problems.

A recommendation of reaching out to the community for more resources, and for more family involvement may be the next step in helping the children in this community. This project has the potential to be transferable to other institutions and outreach facilities in this rural area. The use of the clinical practice guideline may be transferrable to wellness clinics in schools.

Section 5: Dissemination Plan

As a DNP-educated nurse, I feel the responsibility to ensure that my project is disseminated to a larger professional audience. Meeting with stakeholders at the clinic was the first step. My plan is to present this guideline to other clinics in the area who have a similar patient population. Another goal for dissemination is to generate more interest in the topic from other professionals by submitting abstracts for poster presentations, especially at pediatric conferences. Some conferences in consideration are “Once Upon A Time,” Nurse Practitioner Conference at the state level, NANAP, and Arkansas Research Day. I will also search appropriate grants to support ongoing research on this topic. Another premise for further research is to evaluate the outcomes of obesity in developmentally disabled children.

After implementing the clinical-practice guideline and enlarging the patient number that it is employed on, I would like to conduct further assessment of how the guideline is working, and ways it can be improved. This will be done with the assistance of the healthcare team who is now implementing it.

Translating evidence into practice by the creation of this guideline has provided the clinic with an alternative to current practice in the care for obese adolescents. Successful implementation has brought about positive changes for this population within this community with the educational supplementation during routine care. Education plays an important role in change. The adolescent and their family must have tools and

education to make positive choices and decisions. This CPG provides these tools and education.

Analysis of Self

My journey in planning, implementing, and evaluating my DNP project has been a positive and enlightening experience as a practitioner, scholar, and project manager. This project has been challenging. I have had to take a deeper look into myself as a scholar to find how I have grown. The completion of this project has given me a sense of accomplishment and a desire to continue working toward solutions in our healthcare system. This is just the first of many evidence-based projects that are on my agenda. This project has opened my mind to many ways to become a change agent and given me confidence in project management. Measurable outcomes of this project have provided the clinic with data and real information that has in turn helped establish my credibility. The interdisciplinary collaboration has enabled me to establish networks that will be a positive influence in future projects.

Completion of this project has not been without challenges. The clinic I began my project with has completely changed in structure, which caused me to reevaluate my sources within this community to do my project. I found myself as someone who led a change initiative that positively impacted patient care. During this project, I became a collaborator, a leader, a mentor, and a creative force that sought to find a solution to a problem that has plagued the clinic. I recognize the importance of continued mentoring of the team and ensuring I follow a life-long path of learning and contributing to my

profession. This has also helped give me insight on my scholarly journey in the way I am able to collaborate with others and find solutions to complex processes.

Summary

Early identification of at-risk obese adolescent youth is essential to ensuring proper education, treatment, and referral for these patients. This ultimate purpose of this doctoral project has been about making positive change in the lives of obese adolescents. The problem was the lack of consistency within the clinic for the care of the overweight and obese adolescent. The diagnosis, treatment, and referrals of the client had been variable and inconsistent prior to the project. The solution for this was the development and use of this newly created CPG. The results of four out of seven improving toward a healthier weight indicates that this guideline can be beneficial if used by the healthcare team and if the adolescent is compliant with the education given by the healthcare team. This has been a positive experience at this clinic. The inter-professional collaboration has improved with better teamwork and more consideration of the other roles in the clinic.

With this CPG at this one rural clinic, a beginning toward adolescent wellness has occurred. Awareness and education are a necessary start to any change. This has brought about awareness and education about the obesity epidemic and ways to advance healthcare more toward preventative maintenance and a more positive attitude toward this disease. It has also given a guide to assist our healthcare team as they work to help those that are already affected by the obesity epidemic. It is my hope that this will help adolescents in their walk toward better health.

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Appendix A: Evidence-based Clinical Practice Guideline

Evidence-based Clinical Practice Guideline

for Healthcare Providers in the Care of Obese Adolescents

Barbara Hunter Hudgens

Recommendations

Assessment and Management of Overweight/Obesity

The process of leading the adolescent through the stages from least intensive to advanced intensity is best practice.

The nurses will begin with assessment of age, Body Mass Index, risks, and motivation.

Weight Classification is determined by assessing weight, height, and Body Mass Index (with percentile).

Healthy Weight = BMI 5-84%

Overweight = BMI 85-94%

Obese = BMI equal to or greater than 95%

Once the BMI is determined, each adolescent will need a family history, a review of systems, and a physical exam. The health risks are then determined. A lipid profile should be drawn. If risk factors are present, The American Diabetic Association and Endocrine Society recommend an A1C or fasting glucose be performed.

The nurse will use a pre-questionnaire from the child and/or family member(s) to assess the risks of the child for obesity.

At this point in the treatment plan, a conversation with the family needs to take place.

Motivational interviewing techniques, along with empathy and empowerment, should be used in this conversation.

The stages of the treatment plan are:

Stage 1: Prevention

Stage 2: Structured Weight Management

Stage 3: Comprehensive Multi-disciplinary Management

Stage 4: Tertiary Care Intervention

Treatment Plan Stages

Stage 1-Prevention (Healthy Weight 5-84th percentile)

Primary Care Provider

Discussion with patient and family

Consider partnering with dietician, social worker, and physical therapist for added support/ counseling.

Goal of positive behavioral change with decrease in weight and BMI

Experts recommend at least monthly follow-up visits. If no improvement in BMI/weight, consider advancing to stage 2.

Stage 2-Weight Management (BMI overweight 85th – 94th percentile)

Primary Care Provider

Same as Stage 1 with more intensive support and structure

Goal of positive behavioral change with decrease in weight and BMI

Follow-up every 2-4 weeks. After 3-6 months, if no improvement, consider advancing to stage 3.

Stage 3-Multi-disciplinary Intervention (BMI obesity = to or > 95th percentile)

Multi-disciplinary team

Intensity of changes in behavior, frequency of visits, and addition of specialists.

Behavioral modification, food and activity monitoring with dietician, and development of diet and physical activity goals.

Goal of positive behavioral change with decrease in weight and BMI

Follow-up weekly or 2-4 week intervals as determined by plan. After 3-6 months, if no improvement, consider advancing to stage 4.

Stage 4-Tertiary Care Intervention (BMI morbidly obese > 99th percentile)

Referral to weight management center with expertise in childhood obesity

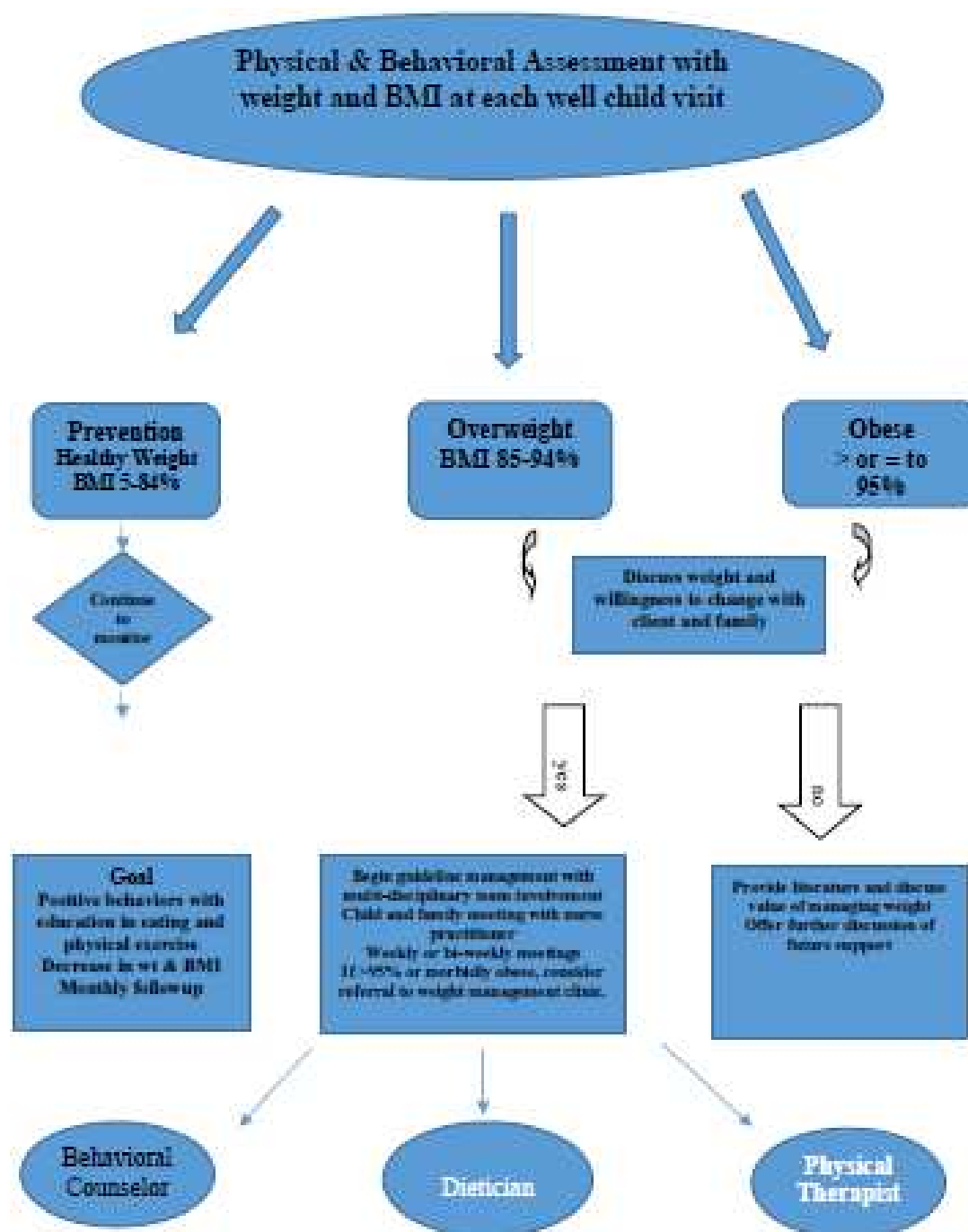
Recommended for equal to or greater than BMI of 95% and significant co-morbidities.

Also for children BMI >99% who have shown no improvement with Stage 3. Intensive dietary treatment with activity counseling along with consideration of medication or surgery.

Goal of positive behavioral change with decrease in weight and BMI

Determine follow-up based on adolescent motivation and/or medical status.

Reference: American Academy of Pediatrics Institute for Healthy Childhood Weight



Appendix B: Internal Review Board Approval

IRB Materials Approved

IRB <irb@mail.waldenu.edu>

Mon 10/14/2019 12:44 PM

Dear Ms. Hudgens,

This email is to confirm that, based on your responses to Form A, your DNP study appears to fall within the parameters that the IRB pre-approved for a DNP Clinical Practice Guideline Development project. This means that you are permitted to collect and analyze data from anonymous expert panelist questionnaires, public data/literature, and internal site documents/data, as per the terms of the pre-approved site agreement (Appendix A) and

Disclosure Form (Appendix B) in the DNP Clinical Practice Guideline Development Manual. No other data may be collected by you without prior approval from the IRB.

Your approval # is 10-14-19-0577157. You will need to reference this number in your final doctoral study and in any future funding or publication submissions. You are required to use the Disclosure Form provided in the DNP Clinical Practice Guideline Development Manual. A copy of this Disclosure Form tailored to include your IRB approval number is attached, and no edits may be made to this approved text.

Your IRB approval expires on October 13th, 2020. One month before this expiration date, you will be sent a Continuing Review Form, which must be submitted if you wish to collect data beyond the approval expiration date.

Your IRB approval is contingent upon your adherence to the exact procedures described in the final version of the DNP Clinical Practice Guideline Development Manual and your IRB Form that has been submitted as of this date. This includes maintaining your current status with the university. Your IRB approval is only valid while you are an actively enrolled student at Walden University. If you need to take a leave of absence or are otherwise unable to remain actively enrolled, your IRB approval is suspended. Absolutely NO participant recruitment or data collection may occur while a student is not actively enrolled.

If you need to make any changes to your project procedures, you must obtain IRB approval by submitting the IRB Request for Change in Procedures Form. You will receive confirmation with a status update of the request within 10 business days of submitting the change request form and are not permitted to implement changes prior to receiving approval. Please note that Walden University does not accept responsibility or liability for doctoral scholarship activities conducted without the IPO's approval, and the University will not accept or grant credit for student work that fails to comply with the policies and procedures related to ethical standards in research and scholarship.

When you submitted your IRB application, you made a commitment to communicate both discrete adverse events and general problems to the IRB within 1 week of their occurrence/realization. Failure to do so may result in invalidation of data, loss of academic credit, and/or loss of legal protections otherwise available to the doctoral student.

Both the Adverse Event Reporting form and Request for Change in Procedures form can be obtained at the Documents & FAQs section of the Walden web site:

<http://academicguides.waldenu.edu/researchcenter/orec>

Doctoral students are expected to keep detailed records of their project activities (i.e., participant log sheets, completed consent forms, etc.) for the same period of time they retain the original data. If, in the future, you require copies of the originally submitted IRB materials, you may request them from Institutional Review Board.

Both students and faculty are invited to provide feedback on this IRB experience at the link below:

<http://www.surveymonkey.com/s.aspx?sm=qHBJzkJMUx43pZegKlmdiO 3d 3d>

Congratulations!

Bryn Saunders
Research Ethics Support Specialist
Office of Research Ethics and Compliance
Email: irb@mail.waldenu.edu
Phone: (612-)312-1336; Fax: (626-)605-0472

Appendix C: Literature Review

Author/Article	Journal	Framework	Quality of Evidence	Level of Evidence
1. Abedyazdan, Z., Moshgdar, H., & Golshiri, P <i>Evaluating the effects of lifestyle education based on health belief model for mothers of obese and overweight school-age children on obesity-related behaviors</i>	<i>Iranian Journal of Nursing and Midwifery Research (2017)</i>	Health Belief Model Quasi experimental study	A-High	I
2. Abela, S., Bagasco, A., Vandoonni, M., Sasso, L. <i>Childhood obesity: An observational study</i>	<i>Journal of Clinical Nursing (2013)</i>	Cross-sectional and observational study Research in brief Investigates eating habits and lifestyle of obese children. One questionnaire about eating habits and one regarding physical activity.	B-Good	III
3. Alqahtani, A. R., & Elahmedi, M. O. <i>Pediatric bariatric surgery: The clinical pathway</i>	<i>Obesity Surgery</i>	Standardized multi-disciplinary obesity management program	A-High Excellent source for transferability	I
4. Al-Yateem, N., Attia, A. K., AL-Yafeim T., Mohammed, A., Mahmood, B. <i>The impact of a school nurse intervention on adolescents' knowledge about healthy eating.</i>	<i>British Journal of School Nursing</i>	Quasi-experimental control group, post-test only design School based healthy nutritional knowledge of adolescents and promotion of healthy lifestyle.	A-High	I

5. Arrington, S. <i>Development of an interactive-game for education regarding sexually transmitted infection</i>	<i>ProQuest</i>		B-Medium	II
6. Bass, R., & Eneli, I. <i>Severe childhood obesity: an under-recognized and growing health problem</i>	<i>Postgrad Medical Journal</i>	Article	C-low	III
7. Busch, A. M., Hubka, A., & Lynch, B.A. <i>Primary care provider knowledge and practice patterns regarding childhood obesity</i>	<i>Journal of Pediatric Healthcare</i>	Provider focused educational intervention	A-high	I
8. Dickey, W., Arday, D.R., Kelly, J., & Carnahan, D. <i>Outpatient evaluation, recognition, and initial management of pediatric overweight and obesity in U.S. military medical treatment facilities</i>	<i>Journal of American Association of Nurse Practitioners</i>	Investigation of outpatient evaluation and initial management of overweight and obese pediatric patients in U.S. military medical treatment facilities	A-high	I
9. Edberg, M. <i>Essentials of health behavior</i>	<i>Social and Behavioral Theory in Public Health</i>		B-medium	II
10. Gibson, S. J. <i>Translation of clinical practice for childhood obesity prevention in primary care mobilizes a rural Midwest community</i>	<i>Journal of the American Association of Nurse Practitioners</i>	Retrospective chart review for gaps in current practice and documentation.	B-medium	II

11. Gilliland, J., Clark, A. F., Kobrzynski, M., Filler, G., <i>Convenience sampling of children presenting to hospital-based outpatient clinics to estimate childhood obesity levels in local surroundings,</i>	<i>American Journal of Public Health</i>	Convenience sampling of children presenting to outpatient clinic to estimate childhood obesity levels in local surroundings	C-low	III
12. Gozum, S., & Capik, C. <i>A guide in the development of health behaviours: Health Belief Model</i>	<i>Dokuz Eylul University Faculty of Nursing Electronic Journal</i>		B-medium	II
13. Gray, J. R., Grove, S.K., & Sutherland, S.	<i>Burns and Grove's the practice of nursing research: Appraisal, synthesis, and generation of evidence (8th ed.)</i>		B-medium	II
14. Jackson, S., Kimeli, G., & Eleys, S. <i>The impact of aerobic Exercises in reducing obesity among African-American adolescents</i>	<i>Pediatric Nursing</i>		C-low	III
15. Jang, M., & Whittemore, R. <i>The Family Management Style Framework for families of children with obesity</i>	<i>Journal of Theory Construction & Testing</i>	Development of Family Management Style Framework to identify key elements of family experiences to the illness of obesity	B-medium	II

16. Kahan, S., & Manson, J.E. <i>Obesity treatment, beyond the guidelines practical suggestions for clinical practice</i>	<i>Journal of American Medical Association</i>	Article-viewpoint Suggestions for clinical practice for obese using the ABCEDF framework	B-good	II
17. Kann, L., Kinchen, S., Shanklin, S. L. Youth risk behavior surveillance	<i>Morbidity & Mortality Weekly Report</i>	Youth risk behavior surveillance system with topics on obesity, bullying, smoking, etc.	A-high	III
18. Kaplan, R. S., Witkowski, M., Abbott, M., Guzman, A., Higgins, L. D., Meara, J. G.,...Feeley, T. W. <i>Using time-driven activity-based costing to identify value improvement opportunities in healthcare</i>	<i>Journal of Healthcare Management</i>	Identification of value improvement opportunities in healthcare	B-medium	II
19. Keshmiri, F., Rezai, M., Mosaddegh, R., Moradi, K., Hafezimoghadam, P., Zare, M.A. ...Shirazi, M. <i>Effectiveness of an inter-professional education model based on the transtheoretical model of behavior change to improve inter-professional collaboration</i>	<i>Journal of Interprofessional Care</i>	Transtheoretical model to assess effectiveness of interprofessional education model (IPE)	A-high	I
20. Kotter, J. <i>8 steps to accelerate change</i>	https://www.kotterinc.com/wp-content/uploads/2018/05/8-Steps-eBook-Kotter-2018.pdf			

21. Kuhle, S., Doucette, R., Piccinini-Vallis, H. & Kirk, S. F. L. <i>Successful childhood obesity management in primary care in Canada: what are the odds?</i>	<i>Peer Journal</i>	Pilot program that highlights primary care obesity in Canada		
22. Longnecker, C. O. <i>Why hospital improvement efforts fail: a view from the front line</i>	<i>Journal of Healthcare Management</i>		A-High	III
23. Ludwig, D. S. <i>Weight loss strategies for adolescents a 14-year-old struggling to lose weight</i>	<i>Journal of American Medical Association</i>	Clinicians corner article Parenting key for adolescents	B-good	II
24. McManamon, R. <i>Practical weight management in primary care</i>	<i>Journal of Community Nursing</i>	Practical advice to support patients in managing their weight, and identifying appropriate onward referrals, including for bariatric surgery and eating disorders	C-low	III
25. Miyazaki, Y., & Stack, M. <i>Examining individual and school characteristics associated with child obesity using a multilevel growth model</i>	<i>Social and Science Medicine</i>	Hierarchical linear model	B-good	II

26. Most, S. W., Hojgaard, B., Teilmann, G., Andersen, J., Valentiner, M., Gamborg, M. ... Holm, J. <i>Adoption of the children's obesity clinic's treatment (TCOCT) protocol into another Danish pediatric obesity treatment clinic</i>	<i>BMC Pediatrics</i>	Chronic care treatment model	B-good	II
27. Newhouse, R., Dearhold, S., Poe, S., Pugh, L. C., White, K. M. <i>Evidence-based practice: a practical approach to implementation</i>	<i>The Journal of Nursing Administration</i>	An evidence based practice way to approach change	B-medium	II
28. Ogden, et. al.	<i>Health Psychology Review</i>	Theories, timing, and choice of audience	C-low	III
29. Prochaska, J. O., & Velicer, W. F. <i>The transtheoretical model of health behavior change</i>	<i>American Journal of Health Promotion</i>	Academic Psychology Review	B-medium	II
30. Puhl, R. M. & King, K. <i>Weight discrimination and bullying</i>	<i>Best Practice & Research Clinical Endocrinology & Metabolism</i>		B-medium	II
31. Quigley, P., White, S. <i>Hospital-based fall program measurement and improvement in high reliability organizations</i>	<i>OJIN: Online Journal of Issues in Nursing</i>	Good information	C-low	III

<p>32. Reyes, I.</p> <p><i>An evaluation of the identification and management of overweight and obesity in a pediatric clinic.</i></p>	<p><i>Journal of Pediatric HealthCare</i></p>	<p>Retrospective chart review</p> <p>Convenience and quota design</p> <p>Descriptive statistics-demo data</p> <p>Nominal data-gender, ethnicity, BMI</p> <p>Purpose: to determine overweight and obese children are accurately identified and evaluate provider adherence to American Academy of Pediatrics guidelines for management of obesity.</p>	<p>A-high</p>	<p>I</p>
<p>33. Rodrigues, A. M., Alves, O. M. A., Amorim, E. C.</p> <p><i>Impact of the childhood obesity intervention project on primary school children from a cluster of schools</i></p>	<p><i>Journal of Nursing Reference</i></p>	<p>Childhood obesity intervention project based on the Ecological Model</p> <p>Quantitative & Qualitative = mixed research</p> <p>Original research paper</p> <p>Used weight, height, & BMI</p> <p>Score of eating habits, level of physical activity. After a year-decrease in weight</p>	<p>B-good</p>	<p>II</p>

<p>34. Schmied, E. A., Chuang, E., Madanat, H., Moody, J., Ibarra, L., Ortiz, K. ...Ayala, G. X.</p> <p><i>A qualitative examination of parent engagement in a family-based childhood obesity program</i></p>	<p><i>Health Promotion Practice</i></p>	<p>Qualitative examination of parent engagement in a family-based childhood obesity program</p>	<p>A-high</p>	<p>I</p>
<p>35. Shaikh, U., Romano, P., & Paterniti, D. A.</p> <p><i>Organizing for quality improvement in health care: An example from childhood obesity prevention</i></p>	<p><i>Quality Management of Healthcare</i></p>	<p>Quality improvement-Healthy Eating Active Living TeleHealth Community of Practice</p>	<p>B-good</p>	<p>II</p>
<p>36. Skinner, A. C., Perrin, E. M., Moss, L. A., Skelton, J. A.</p> <p><i>Cardiometabolic risks and severity of obesity in children and young adults</i></p>	<p><i>New England Journal of Medicine</i></p>	<p>Comparison of NHANES and Wald tests and linear trends using ordinary least squares regression</p>	<p>B-good</p>	<p>II</p>
<p>37. Skjakodegard, H. F., Danielsen, Y. S., Morken, M., Linde, S. F., Kolko, R. P., Balantekin, K. N. ... Juliusson, P. B.</p> <p><i>Study protocol: A randomized controlled trial evaluating the effect of family-based behavioral treatment of childhood and adolescent obesity-The FABO-study</i></p>	<p><i>BMC Public Health</i></p>	<p>Randomized controlled trial</p> <p>Family based behavioral treatment using FABO study</p>	<p>B-medium</p>	<p>II</p>

38. Skinner, A. C., Ravanbakht, S.N., Skelton, J. A., Perrin, E. M., & Armstrong, S. C. <i>Prevalence of obesity and severe obesity in US children</i>	<i>Pediatrics</i>		B-medium	II
39. Small, L., Aplasca, A. <i>Obesity and mental health: A complex interaction</i>	<i>Child and Adolescent Psychiatric Clinics of North America</i>	Good data and approach	B-medium	II
40. Swallen, K., Reither, E., Haas, S., & Meier, A. <i>Overweight, obesity, and health-related quality of life among adolescents: the National Longitudinal Study of Adolescent Health</i>	<i>Pediatrics</i>		A-high	I
41. Thury, C., & de Maros, C. V. <i>Prevention of childhood obesity: A review of the current guidelines and supporting evidence</i>	<i>South Dakota Medicine</i>	Review	B-medium	II
42. Weijden, T., Dreesen, D., Faber, M.J., Bos, N., Derenthen, T., Maas, I., ... Knops, A. <i>Developing quality criteria for patient-directed knowledge tools related to clinical practice guidelines. A development and consensus study</i>	<i>Health Expectations</i>	Informational	A-high	I

43. Wishner, A. <i>Evaluation, treatment, and prevention of obesity in community settings: A unique program addresses the crisis of pediatric and adolescent obesity and its effects on child and family health in the state of Pennsylvania</i>	<i>Contemporary Pediatrics</i>	Community Setting	B-medium	II
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